

Change Number Draft M-34-98-01A	Federal Facility Agreement and Consent Order Change Control Form <small>Do not use blue ink. Type or print using black ink.</small>	Date DRAFT September 2, 1998																								
Originator M-34 Negotiation and Dispute Resolution Teams																										
Class of Change <input checked="" type="checkbox"/> I - Signatories <input type="checkbox"/> II - Executive Manager <input type="checkbox"/> III - Project Manager																										
Change Title Negotiation/Dispute Settlement of <u>Hanford Federal Facility Agreement and Consent Order</u> (Agreement) commitments for the removal of spent nuclear fuel, debris, sludge, and water from the K East and K West Basins.																										
Description/Justification of Change In 1993, the U. S. Department of Energy (DOE) documented the loss of a substantial quantity of water from the 105 K East Basin where spent nuclear fuel is being stored. DOE operational monitoring data confirmed that the basin water released was contaminated with concentrations of radionuclides exceeding public health and environmental protection standards established by the U.S. Environmental Protection Agency (EPA) for hazardous substances as defined by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The DOE acknowledged through internal reporting and by notification of EPA's National Response Center that CERCLA hazardous substances (radionuclides) had been released to the environment at the 105 K East Basin. These, and similar earlier releases from K East Basin have served to increase DOE, EPA, and State of Washington Department of Ecology (Ecology) concerns regarding the integrity of these aging basins. (Continued on page 2)																										
Impact of Change These M-34-98-01A agreements are made in partial fulfillment of Land Disposal Restriction (LDR) treatment requirements of Agreement milestone M-26-00 (which constitutes an existing Agreement or Order for treatment of mixed waste for purposes of the Federal Facility Compliance Act of 1992 (FFCA)), and as companion documentation to LDR documents submitted by DOE pursuant to Agreement milestone M-26-00. Approval of this change request by the Parties establishes a new major milestone, and associated interim milestones and target dates governing the removal of spent nuclear fuel, sludge, debris, and basin water. DOE, Ecology, and EPA agree that this Agreement (K Basins) project will be managed through one, unified, project schedule incorporating Agreement milestones, DOE (internal agency) milestones, Defense Nuclear Facilities Safety Board (DNFSB) milestones, and DOE contractor baseline. On approval, Hanford site planning and budget development documents (e.g., Sitewide System Engineering Control Documents, Project Management Plans, and Multi Year Work Plans) will be modified accordingly.																										
Affected Documents The <u>Hanford Federal Facility Agreement and Consent Order</u> , as amended, and Hanford Site internal planning and budget documents (e.g., Baseline Change Control Documents, Sitewide System Engineering Control Documents, Project Management Plans, and Multi Year Work Plans).																										
Approvals <table style="width: 100%; border: none;"> <tr> <td style="width: 30%; border-bottom: 1px solid black;"></td> <td style="width: 10%; border-bottom: 1px solid black;"></td> <td style="width: 20%; border-bottom: 1px solid black; text-align: center;">___Approved</td> <td style="width: 20%; border-bottom: 1px solid black; text-align: center;">___Disapproved</td> </tr> <tr> <td>DOE</td> <td>Date</td> <td></td> <td></td> </tr> <tr> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black; text-align: center;">___Approved</td> <td style="border-bottom: 1px solid black; text-align: center;">___Disapproved</td> </tr> <tr> <td>EPA</td> <td>Date</td> <td></td> <td></td> </tr> <tr> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black; text-align: center;">___Approved</td> <td style="border-bottom: 1px solid black; text-align: center;">___Disapproved</td> </tr> <tr> <td>Ecology</td> <td>Date</td> <td></td> <td></td> </tr> </table>				___Approved	___Disapproved	DOE	Date					___Approved	___Disapproved	EPA	Date					___Approved	___Disapproved	Ecology	Date			
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The release of CERCLA hazardous substances to the environment, concerns regarding basin age and integrity, and mounting concerns regarding the hazards posed by basin contents have resulted in an agreement between the parties that removal of K East and K West Basin contents (spent nuclear fuel, sludge, debris, and basin water) is necessary. DOE, EPA, and Ecology (the Parties) have agreed that use of a CERCLA "Interim Remedial Action" is warranted. A Proposed Plan for an Interim Remedial Action for removal of spent nuclear fuel, sludge, debris and water from the K Basins will be prepared. The K Basins Interim Remedial Action Proposed Plan will be prepared concurrently with the Proposed Plan for Interim Remedial Actions at the 100 Area Remaining Sites.

History and Basis of Agreement Negotiations:

In early 1993, the Parties conducted initial Agreement negotiations aimed at establishing an agreed upon technical path forward that would minimize and/or eliminate continued endangerment of public health and further contamination of the environment. These negotiations culminated in the establishment of initial Agreement milestones pertaining to Hanford's K-Basins^a. These milestones assumed encapsulation of K East spent nuclear fuel and sludge, and subsequent placement of the fuel and sludge into the K West spent nuclear fuel storage basins. The Parties also agreed to an interim milestone requiring the reduction of the concentration of the radionuclide tritium in K East basin water. At that time, the parties agreed that tritium constituted the principal hazardous substance of concern in basin water and posed the greatest potential risk for further release to the environment and endangerment to public health. Milestones implementing this original technical path forward were agreed upon and established by the Parties in the Agreement's Fourth Amendment. Amendment Four was approved by the Parties in January 1994.

Subsequent to finalization of Agreement Amendment Four, additional information regarding the physical character of basin contents has served to increase safety, public health, and environmental concerns, and to underscore the need for action. As a result of increased knowledge and concerns, DOE proposed a new, safer, and more technically sound path based on the removal and management of all spent nuclear fuel, sludge, debris, and water in the K Basins. A technical analysis of the options associated with selection of a revised technical path forward was documented in a National Environmental Policy Act Environmental Impact Statement (NEPA EIS). In March of 1996, an EIS Record of Decision (ROD) was issued documenting the new technical path forward as the preferred alternative for the management of K-Basins spent nuclear fuel. As a result of this programmatic change in direction, the parties agreed to renegotiate the existing Agreement Milestone M-34-00 series. This commitment to renegotiate was documented in Agreement Change Control Form #M-34-95-02 (March 28, 1995).

This Agreement commitment required DOE to submit a signed change request by June 30, 1996, proposing specific dates for milestones covering the removal of spent nuclear fuel and sludge, completion of stabilization/transition activities, and for transfer of Hanford's K East and K West Basins to DOE's Environmental Restoration Program. DOE's change request was also to serve as the basis for initiating associated negotiations.

On June 26, 1996, DOE submitted its signed change request (M-34-96-02) to Ecology proposing milestones and associated commitments, and requesting that the Parties initiate K Basins negotiations. Ecology disapproved the submitted change request in its particulars on July 12, 1996, but accepted it as a basis from which to begin negotiations to develop mutually acceptable K-Basins commitments. Other agreements among the Parties regarding these negotiations may be found at: (1) their August 16, 1996, Agreement In Principle; (2) DOE's November 1, 1996, letter requesting temporary suspension of negotiations (J. D. Wagoner to M. Riveland and C. Clarke); and (3) a resulting Inter-Agency Management Integration Team (IAMIT), November 16, 1996, "Resolution of Dispute". Tentative agreement was reached on April 16, 1997, and the Parties submitted the M-34-97-01 change request for public comment starting June 9, 1997. DOE subsequently informed Ecology and EPA that it was unable to approve finalization of that tentative agreement.

This revised (M-34-98-01A) change request is a result of the Parties' dispute settlement. Assumptions utilized in reaching these milestones include the following:

^aUnless otherwise noted, the term "K basins" is used here to denote both K East and K West basins.

1. An appropriate number of both enforceable major and interim milestones, and unenforceable target dates should be established so as to effectively drive each of the four phases of K East and K West Basin work, i.e., spent nuclear fuel, sludge, debris, and basin water.
2. The Parties will employ a CERCLA Interim Remedial Action to abate further releases, or threats of releases of hazardous substances from the basins. This will include development of a Focused Feasibility Study; to assess alternatives for waste disposition that will ensure complete removal of spent nuclear fuel, sludge, debris, and water from the basins in accordance with these M-34-98-01A milestones. It will also include an Interim Remedial Action Proposed Plan, a Record of Decision (ROD), and a Remedial Design Report/Remedial Action Work Plan.
3. The engineered structure of the K Basins and associated soil contamination will be remediated in accordance with the remaining sites ROD for the 100 Area.
4. EPA, with assistance from DOE, will prepare a ROD from the K Basins Administrative Record.
5. DOE will consult regularly with EPA and Ecology on the project and will provide copies of design documents as they are prepared in order to help ensure timely compliance with the M-34-00A milestone series.

New (M-34-98-01A) milestones and target dates (below) replace and delete the current Agreement's series, i.e., M-34-00, M-34-00-T02, M-34-00-T06, M-34-00-T07, M-34-00-T08, and M-34-01. Deleted milestones and targets are as follows:

<u>Milestone</u>	<u>Description</u>	<u>Due Date</u>
M-34-00	Complete actions specified by agreed interim milestones related to remediation of the K East Basins.	TBD
M-34-00-T02	Initiate K East Basin Fuel Encapsulation.	TBD
M-34-00-T06	Initiate K East Basin Sludge Encapsulation.	11/30/96
M-34-00-T07	Complete Encapsulation of the Fuel and Sludge within K East Basin.	12/31/98
M-34-00-T08	Remove all fuel and sludge from both K East and K West Basins in an Encapsulated form.	12/31/02
M-34-01	Contaminated K East Basin water will be removed, replaced, or treated. The timing of this action must be coordinated with encapsulation and the cleaning of the residual contamination in the basin and (as noted below) the alternative selection is dependent on the feasibility of moving encapsulated K East Basin fuel and sludge to the K West Basin. The contaminated water will be dispositioned in accordance with reasonable available Hanford Site treatment and/or disposal processes and methods, available at the time of	TBD

this action. Unless a better option becomes available, the water will be trucked to C-018 for disposal.

If the K East fuel and sludge, once encapsulated, can be moved to the K West Basin (determined through a September 1994 Engineering study target date) the removal and disposal of the contaminated water shall be completed by September 2000. This date is an eighteen-month action, starting in March 1999, three months after fuel and sludge encapsulation is completed. If the transfer of encapsulated K East Basin fuel and sludge to K West Basin is infeasible, contaminated K East Basin water will be replaced by fresh water, starting in September, 1996 at a rate of two million gallons/year and will continue until such time that the tritium concentration in the basin is decreased and is maintained at or below 300,000 pCi/L (the goal is to reduce the tritium concentration in the basin such that resulting groundwater tritium concentration meet drinking water concentration standards, recognizing a lag between basin and groundwater concentrations).

Action Plan Changes:

DOE 's K Basins are hereby deleted as "key facilities" subject to Agreement Section 8 (Facility Decommissioning Process). The K Basins are identified as waste sites within the 100-KR-2 Operable Unit, and as such will be managed under Section 7 (Past Practice Processes) of the Agreement and added to Appendix C of the Agreement.

The new M-34-00A major milestone series established by this M-34-98-01A change is as follows:

M-34-00A	Complete removal of spent nuclear fuel, sludge, debris, and water at DOE's K Basins ^a .	07/31/07
M-34-03	DOE will submit a Proposed Plan and Focused Feasibility Study for Remedial Action for the K Basins to EPA and Ecology for approval. The Focused Feasibility Study will assess alternatives for waste disposition and will include results of chemical treatment tests necessary to support Tank Waste Remediation Systems acceptance of sludge.	11/30/98
M-34-04	The DOE shall submit a Remedial Design Report/Remedial Action Work Plan for the K Basins Interim Action to EPA and Ecology for approval. This Work Plan shall be constrained by these (M-34-98-01A) Agreement milestones and target dates, and shall propose detailed	03/31/00

Unless otherwise noted, the term "K basins" is used here to denote both K East and K West basins.

schedules for initiating and completing activities required for the removal of hazardous substances from K Basins (spent nuclear fuel, sludge, debris, and water).

Sludge and Debris Removal

M-34-05-T01	<p>Submit DOE approved annual report on quantities, character, and management (e.g., segregation and management subsequent to removal) of K Basins debris to Ecology and EPA. The final report of this series shall be the one occurring one year after completion of milestone M-34-00A.</p>	Annually
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M-34-06-T01	<p>Initiate K West spent nuclear fuel canister cleaning operations.</p> <p>Canister cleaning operations consist of removal of all contents from each canister and processing of the canisters through the radioactive decontamination apparatus.</p>	12/31/00
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M-34-07-T01	<p>Complete final safety basis for the transfer of K Basins sludge.</p> <p>Provide to Ecology and EPA the DOE approved: 1) K Basin Safety Analysis Report (SAR) update; 2) storage facility SAR or SAR modification; and, 3) Safety Analysis Report for Packaging (SARP) authorizing the transfer of K Basins sludge.</p>	12/31/03
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M-34-08	<p>Initiate full scale K East Basin sludge removal.</p> <p>DOE shall complete and approve K East sludge removal definitive design documents, all associated construction, and readiness assessments, and initiate removal of sludge from the Basin.</p>	07/31/04
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M-34-09-T01	<p>Complete K Basins rack and canister removal.</p>	12/31/04
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M-34-10	<p>Complete sludge removal from K Basins.</p>	08/31/05
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Spent Nuclear Fuel Removal

M-34-11-T01	<p>Complete construction of K West Basin integrated water treatment system to support spent nuclear fuel removal.</p>	06/30/99
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The K West Basin integrated water treatment system shall be constructed, installed, and acceptance test(s) completed.

M-34-12	Complete construction of K East Basin integrated water treatment system to support spent nuclear fuel removal.	02/28/01
	The K East Basin integrated water treatment system shall be constructed, installed, and acceptance test(s) completed.	
M-34-13A-T01	Complete construction and installation of K West Basin Spent Nuclear Fuel Retrieval System.	07/31/99
	The K West Basin spent nuclear fuel retrieval system shall be constructed, installed, and acceptance test(s) completed.	
M-34-13B-T01	Complete construction and installation of K East Basin Spent Nuclear Fuel Retrieval System.	11/30/00
	The K East Basin spent nuclear fuel retrieval system shall be constructed, installed, and acceptance test(s) completed.	
M-34-14A	Complete K West Cask Facility modifications.	09/30/99
	The K West Cask System Facility modifications shall be constructed, installed and acceptance test(s) completed.	
M-34-14B-T01	Complete K East Cask Facility modifications.	01/31/01
	The K East Cask System Facility modifications shall be constructed, installed, and acceptance test(s) completed.	
M-34-15A-T01	Complete two bays of the Cold Vacuum Drying Facility construction and installation.	10/31/99
	The first two bays of the Cold Vacuum Drying Facility shall be constructed, all process equipment installed, and acceptance tests completed.	
M-34-15B-T01	Complete remaining bay(s) of the Cold Vacuum Drying Facility construction and installation.	06/30/00
	The remaining bay(s) of the Cold Vacuum Drying Facility shall be constructed, all process equipment installed, and acceptance tests completed.	

M-34-16 **Initiate Removal of K West Basin Spent Nuclear Fuel.** **11/30/00**

The Cold Vacuum Drying (CVD) Facility and Canister Storage Building (CSB) shall be ready to receive spent nuclear fuel. The spent nuclear fuel transport system shall be operable. The K West Basin spent nuclear fuel retrieval system shall begin retrieving, cleaning, and packaging spent nuclear fuel, and the First Multi-Canister Over Pack of spent nuclear Fuel will be loaded and transported to the Cold Vacuum Drying facility for processing.

M-34-17 **Initiate Removal of K East Basin Spent Nuclear Fuel.** **11/30/01**

The K East Basin spent nuclear fuel retrieval system shall begin retrieving, cleaning, packaging and removing spent nuclear fuel for transport to the Cold Vacuum Drying Facility.

M-34-18A **Complete Removal of all K West Basin Spent Nuclear Fuel.** **04/30/03**

This interim milestone will be complete when all spent nuclear fuel has been removed. It is understood that additional fuel fragments may be discovered during removal of the sludge.

M-34-18B **Complete Removal of all K East Basin Spent Nuclear Fuel.** **12/31/03**

This interim milestone will be complete when all spent nuclear fuel has been removed. It is understood that additional fuel fragments may be discovered during removal of the sludge.

Basin Water Remediation

M-34-19 **Initiate removal, replacement, and treatment of contaminated K Basins water where tritium concentrations exceed 300,000 pCi/L.** **04/30/04**

M-34-20 **Complete removal, replacement, and treatment of contaminated K Basins water such that the tritium concentration in the basin is decreased and is maintained at or below 300,000 pCi/L. This milestone could be satisfied by removing all water.** **10/31/05**

M-34-21 **Initiate full scale K West Basin water removal.** **09/30/04**

M-34-22	Complete K West Basin water removal.	09/30/05
M-34-23	Initiate full scale K East Basin water removal.	10/31/05
M-34-24	Complete K East Basin water removal.	10/31/06